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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,635	12/17/2003	Satoshi Okamoto	Q78955	4743

7590 10/20/2004

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT PAPER NUMBER

1711

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/736,635

Applicant(s)

OKAMOTO ET AL.

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-17 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 12 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-11,13 -17,19 - 21 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 6210872 see abstract, col. 1 though col. 2 lines 50 and structural formulas in cols. 4 -22, and examples 1-5.**

With regard to claims 1, 3, 4, 5, 6, note that **USP 6210872** discloses an optical film capable of readily vitrifying the tendency and state of liquid crystal alignment, excellent in the ability to retain the alignment state, and suitable for the application to optical elements. The film is produced from a liquid-crystal material containing as the essential ingredient a liquid-crystal polyester having structural units (A) and (B) as the essential unit, exhibiting a vitrified state at a temperature lower than the liquid-crystal transition point, and having a logarithmic viscosity number (.eta.) of 0.04-0.4 dl/g as measured at 30 C in a phenol/tetrachloroethane solvent (60/40 by weight).

These structural units are formed from terephthalic acid or derivatives thereof, substituted terephthalic acid or derivatives thereof, hydroquinone or

derivatives thereof, substituted hydroquinone or derivatives thereof, 4-hydroxybenzoic acid or derivatives thereof, substituted 4-hydroxybenzoic acid or derivatives thereof, isophthalic acid or derivatives thereof, substituted isophthalic acid or derivatives thereof, resorcinol or derivatives thereof, substituted resorcinol or derivatives thereof, 3-hydroxybenzoic acid or derivatives thereof, substituted 3-hydroxybenzoic acid or derivatives thereof, 4,4'-biphenyldicarboxylic acid or derivatives thereof, substituted 4,4'-biphenyldicarboxylic acid or derivatives thereof, 4,4'-substituted biphenol or derivatives thereof, 4'-hydroxy-4-biphenylcarboxylic acid or derivatives thereof, substituted 4'-hydroxy-4-biphenylcarboxylic acid or derivatives thereof, 2,6-naphthalenedicarboxylic acid or derivatives thereof, substituted 2,6-naphthalenedicarboxylic acid or derivatives thereof, 2,6-naphthalenediol or derivatives thereof, substituted 2,6-naphthalenediol or derivatives thereof, 6-hydroxy-2-naphthoic acid or derivatives thereof, and substituted 6-hydroxy-2-naphthoic acid or derivatives thereof.

With regard to applicants' claim 2 regarding the 4,4 dihydroxybiphenyl moiety, note that the reference discloses in col 9 lines 15 through 30 several examples of dihydroxybiphenyl moieties used therein.

With regard to applicants' claim 7 the reference discloses that after the application of the solution, the solvent is removed, allowing a layer of the liquid crystalline polyester having a uniform thickness to be formed on the orienting substrate. How to remove the solvent is not specially limited insofar as the method adopted permits substantial

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removal of the solvent used without flowing or dropping of the liquid crystalline polyester layer. Usually, the solvent is removed by drying at room temperature, drying in a drying oven, or spraying of warm or hot air. The reference also discusses therein with regard to casting etc. various liquid crystalline polymers have been developed and commercialized in the field of high-performance materials, utilizing their dynamic characteristics such as having high elasticity, high rigidity, high heat resistance, and superior moldability.

With regard to applicants' claim 8 discloses a solvent for preparing the liquid crystalline polymer solution differs depending on, say, the composition ratio of the polyester, but usually it is selected from among halogenated hydrocarbons such as chloroform, dichloromethane, carbon tetrachloride, dichlorethane, tetrachloroethane, trichloroethylene, tetrachloroethylene, chlorobenzene, and o-dichlorobenzene, phenols such as phenol.

With regard to applicants' claims 9, 10 and 11 the reference discloses that a 17 wt % solution of this polyester in a mixed phenol/tetrachloroethane (60/40 weight ratio) solvent. Note that because of the solution mixture includes therein a halogenated moiety, the resulting solvent would necessarily include a halogenated phenol. See Table 9. See also claim 1 of the reference.

With regard to applicants' claims 13, 14, 15, 16, 17, 19, 20 and 21 the reference discloses that for accelerating the polymerization reaction there may be used amines such as 1-methylimidazole and 4-dimethylaminopyridine, as well as metallic salts of metals such as alkali metals, Fe, Mn, Ti, Co, Sb, and Sn, each alone or in combination.

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Note that the catalyst includes titanium ion and thus anticipates applicants' dielectric substance since this would be an inherent characteristic of the catalyst.

There appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **Claim Objections**

Claims 12, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is **( 571-272-1700).**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb


**Examiner Terressa Boykin  
Primary Examiner  
Art Unit 1711**

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tmb

  
Examiner Terressa Boykin  
Primary Examiner  
Art Unit 1711